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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,912	10/22/2003	Akira Izumi	P/1250-264	6373
2352	7590	10/20/2005	EXAMINER	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			CHEN, KIN-CHAN	
			ART UNIT	PAPER NUMBER
			1765	
DATE MAILED: 10/20/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/690,912

Applicant(s)

IZUMI ET AL.

Examiner

Kin-Chan Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 15-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 012304.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of claims 1-14 on September 30, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda et al. (US 2002/0035762; hereinafter "Okuda") in view of Aoki et al. (US 5,635,053; hereinafter "Aoki") or Chang (US 6,423,147).

In a method and system for substrate processing, Okuda teaches that the droplets formed by mixing an alkaline solution (or acid solution) and gas may be injected to a surface of a substrate. (abstract; [0028], [0295]).

Unlike the claimed invention, Okuda does not teach two or three steps of applying various solutions to the surface of a substrate. In a method for cleaning the substrate, Aoki (col.1 lines 36 to 47 and example) or Chang (col. 1, lines 25 to 43) teaches a first step of applying a mixed solution containing an ammonia water and hydrogen peroxide water and a second step of applying a mixed solution containing hydrochloric acid and hydrofluoric acid to efficiently clean the surface of a substrate. Hence, it would have been obvious to one with ordinary skill in the art to use multiple steps cleaning methods as taught by Aoki or Chang in the process of Okuda in order to efficiently clean the surface of a substrate.

As to claim 7, it would have been obvious to one with ordinary skill in the art to repeat the cleaning process as needed (such as applying an alkaline solution, an acid solution, then an alkaline solution as instantly claimed), depending on the product requirement in order to achieve the required cleanness.

5. Claims 4-6 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (US 5,635,053; hereinafter "Aoki") or Chang (US 6,423,147) in view of Hall (US 4,326,553) or Bran (US 6,039,059).

Aoki (col.1 lines 36 to 47 and example) or Chang (col. 1, lines 25 to 43) teaches a first step of applying a mixed solution containing an ammonia water and hydrogen peroxide water and a second step of applying a mixed solution containing hydrochloric acid and hydrofluoric acid to clean the surface of a substrate. It would have been obvious to one with ordinary skill in the art to repeat the cleaning process as needed (such as applying an alkaline solution, an acid solution, then an alkaline solution as instantly claimed), depending on the product requirement in order to achieve the required cleanness.

The claimed invention differs from the prior art by specifying conventional method of applying megasonic vibrations to the solution. Hall (abstract; col. 2, lines 12-25) or Bran (US 6,039,059; abstract; col. 1, lines 10-15) is only relied on to show the conventional method of applying megasonic vibrations to the solution. Because it is a convention method and because it is disclosed by Hall or Bran, it would have been obvious to one with ordinary skill in the art to apply megasonic vibrations to the solution in the process of Aoki or Chang in order to effectively remove the particles.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kin-Chan Chen whose telephone number is (571) 272-1461. If attempts to reach the examiner by telephone are unsuccessful, the examiner's

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supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

October 14, 2005



Kin-Chan Chen  
Primary Examiner  
Art Unit 1765